

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Masahide MIURA

Group Art Unit: 1793

Application No.: 10/589,669

Examiner: A. ZIMMER

Filed: August 16, 2006

Docket No.: 129110

For: METAL OXIDE PARTICLE, PRODUCTION PROCESS THEREOF AND EXHAUST
GAS PURIFYING CATALYST

REQUEST FOR RECONSIDERATION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In reply to the November 18, 2009 Office Action, reconsideration of the rejection is respectfully requested in light of the following remarks.

The Office Action rejects claims 6, 10, 11, and 15 under 35 U.S.C. §103(a) as having been obvious over U.S. Patent Application Publication No. 2002/0098975 to Kimura et al. ("Kimura"). Applicant respectfully traverses the rejection.

The Office Action asserts that Kimura teaches in Example 2 (*see* paragraph [0047]) impregnating a cerium nitrate onto a zirconium powder followed by calcination, where a part of the cerium is dissolved into the zirconium oxide forming a solid solution. The Office Action, on page 3, alleges that the portion of the cerium that forms the solid solution with the zirconium is the core and the remaining cerium is the surface layer, and asserts that this meets the limitations of claim 6. Applicant disagrees for the following reasons.

First, Kimura provides no indication of the percentage of cerium that forms a solid solution with the zirconia, thus there is no indication of how much cerium would be left over

to form the "surface layer" asserted by the Office Action. Because these amounts are unknown, it is impossible to deduce whether "a molar fraction of cerium constituting ceria in the surface layer to all the metals in the surface layer is higher than a molar fraction of the cerium constituting the ceria in the core part to all the metals in the core part" as required by claim 6.

Second, Kimura teaches in paragraph [0034] that the core member of its exhaust gas purifying catalyst is constituted by "ordinary zirconia particles" or "heat-resistant zirconia particles." In paragraph [0035], Kimura teaches that the heat-resistant zirconia particles are zirconia particles that have been solved or composited with at least one rare-earth element, preferably neodymium and/or cerium. Example 2 clearly describes the formation of these heat-resistant zirconia particles, which Kimura describes as constituting the core member of its exhaust gas purifying catalyst. Therefore, the Office Action's assertion that Example 2 of Kimura teaches a core and surface layer is contrary to the teachings of Kimura.

Third, even if the remaining cerium was viewed as the surface layer, Applicant respectfully disagrees that the molar fraction of ceria in the surface layer would be 100% (*see* Office Action, page 3, line 4). Kimura teaches in paragraph [0016] a first embodiment where the zirconia particles are covered at least in part by a transition metal layer. In paragraph [0019], Kimura teaches that the transition metal layer preferably includes at least one metallic element selected from iron, nickel, cobalt, and copper. Kimura teaches a second embodiment where the surface layer further comprises titania powder and/or zeolite powder. *See* paragraph [0016]. Therefore, it is evident that even if there is ceria in the surface layer of the particles taught by Kimura, it is certainly not the only metal present in that layer.

Fourth, none of the embodiments disclosed by Kimura teaches all of the elements required by claim 6, therefore the claims are not anticipated by Kimura. However, the Office

Action provides absolutely no explanation as to why the claimed catalysts would have been obvious to one of skill in the art. In at least this respect, the rejection is *per se* improper.

For at least these reasons, claim 6, and claims 10, 11, and 15 which depend from claim 6, would not have been rendered obvious by Kimura. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

* * * * *

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the application are earnestly solicited.

Should the Examiner believe that anything further would be desirable to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Date: February 11, 2010

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